

What is claimed is:

1. An apparatus processing a substrate, comprising:

a plurality of lift pins causing the substrate to move up and down;

5 a first lifting mechanism causing the plurality of lift pins to move up and down;

a heating plate performing a heating process onto the substrate, having a plurality of holes causing the plurality of lift pins to protrude and sink there-
10 through to a surface facing the substrate;

a lid having an inside portion and an outside portion, being disposed above the heating plate so that the inside portion faces the heating plate, and capable of moving up and down;

15 a second lifting mechanism causing the lid to move up and down;

a first inert gas introducing mechanism introducing a first inert gas to the inside portion of the lid; and

20 a second inert gas introducing mechanism introducing a second inert gas onto the surface of the heating plate through the plurality of holes.

2. The apparatus as set forth in claim 1, further comprising:

25 a first controlling mechanism introducing the second inert gas onto the surface of the heating plate with using the second inert gas introducing mechanism

while the first inert gas is being introduced into the inside portion of the lid with using the first inert gas introducing mechanism in a state that both the lid and the plurality of lift pins are lifted up.

5 3. The apparatus as set forth in claim 1, further comprising:

 a first adjusting mechanism causing a temperature of the first and the second inert gas to be lower than that of the substrate on the heating plate during the
10 heating process.

4. The apparatus as set forth in claim 1, further comprising:

 a second controlling mechanism causing an amount of the first inert gas introduced into the inside
15 portion of the lid to be larger than that of the second inert gas while the lid moves up and down.

5. The apparatus as set forth in claim 1, further comprising:

 a pressure measuring portion measuring pressure
20 in the inside portion of the lid;

 an exhaust mechanism exhausting the first inert gas in the inside portion of the lid; and

 a second adjusting mechanism adjusting the amount of the first inert gas introduced into and exhausted
25 from the inside portion of the according to the value measured with the pressure measuring portion, so that the pressure in the inside portion of the lid becomes

constant.

6. The apparatus as set forth in claim 5, further comprising:

5 a third adjusting mechanism adjusting the amount of the first inert gas introduced into and exhausted from the inside portion of the lid just before the lid moves up and down from the heating plate, so that the pressure in the inside portion of the lid becomes higher than an atmospheric pressure.

10 7. The apparatus as set forth in claim 6, further comprising:

15 a third controlling mechanism causing a temperature of the second inert gas higher than that of the first inert gas introduced into the inside portion of the lid; and

20 an upward and downward movement controlling mechanism causing the lid to move down so that a lower end of the lid becomes approximately the same level as a surface of the substrate while the plurality of lift pins move up holding the substrate, then causing the plurality of lift pins to move down simultaneously with the lid being positioned at approximately the same level as the surface of the substrate.

25 8. The apparatus as set forth in claim 7, further comprising:

a gas guiding member being provided around the top end of at least one of the plurality of lift pins,

being folded when the plurality of lift pins sink into the plurality of holes, and being unfolded when the lift pins protrude through the heating plate so that the second inert gas introduced through the plurality of holes is guided along the surface of the heating plate.